generating oscillation of one of said plurality of lasers at a desired wavelength, and controlling the oscillation wavelength of the laser so that an output value of said detecting becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths.

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

I. STATUS OF THE CLAIMS

Claims 1, 2, 6, and 8-14 are amended herein.

New claims 15-18 are added.

In view of the above, it is respectfully submitted that claims 1-18 are currently pending and under consideration.

II. REJECTION OF CLAIMS 1-10, 13-14 UNDER 35 U.S.C. § 102(A) AS BEING ANTICIPATED BY KOSAKA (USP# 6,262,835)

The present invention as recited, for example, in claim 1 as amended herein, relates to a device comprising "an etalon filter having a periodic transmittance-wavelength characteristic for receiving laser light output from said light source" and "controlling means . . . controlling an oscillation wavelength of the laser so that an output value of said light detecting means becomes equal to a target value corresponding to said desired wavelength."

As shown in Fig. 14 and column 20, lines 17-34, Kosaka discloses an optical amplifier system having an optical amplifier unit 9, which outputs an optical signal. Part of an output light of the optical signal, is separated by a splitter 17 and detected at a detecting unit 14. The separated light is sent to an optical detector 18 through a band pass filter 21, which removes optical signal components, and the optical detector 18 detects an amount of spontaneous emission. A control unit 20 controls the optical amplifier unit so that the amplifier unit has an amount of spontaneous emission below a maximum predetermined amount of spontaneous emission, using the signal detected from the detecting unit 14.

However, Kosaka is fundamentally different from the present invention which is related to

controlling an optical wavelength corresponding to a desired wavelength. For example, as indicated in Fig. 14 and column 20, lines 17-34, Kosaka controls an amount of spontaneous emission (e.g., optical power) of an optical amplifier unit, which is not the same as controlling an oscillation wavelength of a laser so that an output value of a light detecting means becomes equal to a target value corresponding to a desired wavelength as recited in claim 1 of the present application.

Further, the band pass filter 21 of Kosaka differs from the etalon filter of the present application. For example, the band pass filter 21 of Kosaka is used to remove optical signal components, whereas the etalon filter of the present application is used to vary optical signals according to wavelengths of lights output from lasers. Thus, in the present application, a control unit controls an oscillation wavelength of the lasers so that an output value thereof becomes equal to a target value corresponding to a desired wavelength (see claim 1 of the present application).

In light of the above, it is respectfully submitted that Kosaka does not disclose the features recited in claim 1 of the present application.

Similar to claim 1, independent claim 14 recites "an etalon filter for receiving laser light output from said laser, which transmittance-wavelength characteristic is temperature dependence in accordance with temperature dependence of an oscillation wavelength of said laser" and "controlling means controlling an oscillation wavelength of laser light output from said laser so that an output value of said light detecting means becomes equal to a target value that is set for each of said plurality of wavelengths." Therefore, it is respectfully submitted that Kosaka also does not disclose the features recited in claim 14 of the present application.

Claims 2-10 and 13 depend from claim 1. Therefore, for at least the reasons that claim 1 distinguishes over the cited prior art, it is respectfully submitted that claims 2-10 and 13 also distinguish over the cited prior art.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIMS 11 AND 12 UNDER 35 U.S.C. § 103(A) AS BEING UNPATENTABLE OVER KOSAKA ET AL. (USP# 6,262,835)

The comments in section II, above, also apply here. Further, claims 11 and 12 depend from claim 1. Therefore, for at least the reasons that claim 1 distinguishes over the cited prior

art, it is respectfully submitted that claims 11 and 12 also distinguish over the cited prior art.

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. NEW CLAIMS

Claim 15 recites "an etalon filter having a periodic transmittance-wavelength characteristic to receive laser light output from said light source" and "a control unit to control the oscillation wavelength of the laser so that an output value of said light detecting unit becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths," which distinguishes over the cited prior art. Claim 16 recites "etalon filters, each having a periodic transmittance-wavelength characteristic to receive laser light output from said light source" and "a control unit to control the oscillation wavelength of the respective laser of said plurality of lasers so that an output value of the respective light detecting unit becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths," which distinguishes over the cited prior art.

Further, claim 17 recites "a light detecting unit to receive laser light output from an etalon filter, and to detect light intensity of the received laser light" and "a control unit to control the oscillation wavelength of the laser so that an output value of said light detecting unit becomes equal to a target value corresponding to said desired wavelength," which distinguishes over the cited prior art. Claim 18 recites "receiving laser light output from said light source with an etalon filter having a periodic transmittance-wavelength characteristic" and "controlling the oscillation wavelength of the laser so that an output value of said detecting becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths," which distinguishes over the cited prior art.

In view of the above, it is respectfully submitted that new claims 15-18 patentably distinguish over the cited prior art.

V. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND the following claims:

1. (ONCE AMENDED) A device comprising:

a light source [comprising] having a plurality of lasers capable of oscillating at a plurality of wavelengths;

[a periodic] an etalon filter having a periodic transmittance-wavelength characteristic for receiving laser light output from said light source;

light detecting means for receiving laser light output from said [periodic] etalon filter and detecting light intensity of the received laser light; and

controlling means for generating oscillation of any one of said plurality of lasers [of] at a desired wavelength, and for controlling an oscillation wavelength of the laser so that an output value of said light detecting means becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths.

2. (ONCE AMENDED) A device according to claim 1, wherein[:], laser light output from said light source has nearly constant wavelength spacing[;],

a length of a period of said [periodic] etalon filter is substantially equal to a length of said wavelength spacing[;], and

each of said plurality of target values is set at a value between two adjacent extremums of said transmittance-wavelength characteristic.

3. (AS UNAMENDED) A device according to claim 2, wherein a target value corresponding to a center wavelength of said plurality of wavelengths is set at a value at approximately the center of two adjacent extremums of said transmittance-wavelength characteristic.

4. (AS UNAMENDED) A device according to claim 2, wherein said controlling means controls said oscillation wavelength after generating oscillation of said one laser at a wavelength which is in a range including a wavelength approximately at the center of two

adjacent extremums of said transmittance-wavelength characteristic, the range included in ranges between said desired wavelength and a wavelength closest to said desired wavelength and having an extremum of said transmittance-wavelength characteristic.

5. (AS UNAMENDED) A device according to claim 2, wherein said controlling means controls said oscillation wavelength after generating oscillation of said one laser at a wavelength which is closest to said desired wavelength and is approximately at the center of two adjacent extremums of said transmittance-wavelength characteristic.

6. (ONCE AMENDED) A device according to claim 2, further comprising:

optical amplifying means for amplifying laser light to be output to an exterior.

7. (AS UNAMENDED) A device according to claim 6, wherein said optical amplifying means is used in a saturation range.

8. (ONCE AMENDED) A device according to claim 2, wherein said plurality of lasers are semiconductor lasers[;], and

said controlling means controls said oscillation wavelength by controlling device temperature of said one laser.

9. (ONCE AMENDED) A device according to claim 2, wherein said plurality of lasers are semiconductor lasers[;], and

said controlling means controls said oscillation wavelength by controlling driving current of said one laser.

10. (ONCE AMENDED) A device according to claim 2, wherein said plurality of lasers are semiconductor lasers[;], and

said controlling means controls device temperature of said one laser when generating oscillation of said one laser and controls driving current of said one laser when controlling said oscillation wavelength.

11. (ONCE AMENDED) A device according to claim 1, [wherein said periodic filter is] further comprising:

a plurality of etalon filters whose transmittance-wavelength characteristics are the same

in period and temperature dependence; and

[the number of said] a plurality of light detecting means [corresponds] corresponding with the [number of] said plurality of etalon filters, respectively, to receive laser light output from the filters.

12. (ONCE AMENDED) A device according to claim 11, wherein laser light output from said light source has nearly constant wavelength spacing[;],

each of said spacing is divided into a plurality of wavelength ranges[;], and

each of said wavelength ranges is respectively within ranges between two adjacent extremums of said transmittance-wavelength characteristics of said plurality of filters.

13. (ONCE AMENDED) A device according to claim 1, wherein said [periodic] etalon filter has temperature dependence, which is said transmittance-wavelength characteristic, in accordance with temperature dependence of an oscillation wavelength of said plurality of lasers.

14. (ONCE AMENDED) A device comprising:

a laser capable of oscillating at a plurality of wavelengths;

[a periodic] an etalon filter for receiving laser light output from said laser, which transmittance-wavelength characteristic is temperature dependence in accordance with temperature dependence of an oscillation wavelength of said laser [and];

light detecting means for receiving laser light output from said [periodic] etalon filter and detecting light intensity of the received laser light; and

controlling means for generating oscillation of said laser at one of said plurality of wavelengths, and controlling an oscillation wavelength of laser light output from said laser so that an output value of said light detecting means becomes equal to a target value that is [commonly] set for each of said plurality of wavelengths.

Please ADD the following NEW claims:

15. (NEW) An apparatus, comprising:

a light source having a plurality of lasers capable of oscillating at a plurality of wavelengths;

an etalon filter having a periodic transmittance-wavelength characteristic to receive laser

light output from said light source;

a light detecting unit to receive laser light output from said etalon filter, and to detect light intensity of the received laser light; and

a control unit to generate oscillation of any one of said plurality of lasers at a desired wavelength, and to control the oscillation wavelength of the laser so that an output value of said light detecting unit becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths.

16. (NEW) An apparatus, comprising:

a light source having a plurality of lasers capable of oscillating at a plurality of wavelengths;

etalon filters, each having a periodic transmittance-wavelength characteristic to receive laser light output from said light source;

light detecting units to correspond to said etalon filters, respectively, to receive laser light output from said etalon filters, and to detect light intensity of the received laser light; and

a control unit to generate oscillation of any one of said plurality of lasers at a desired wavelength, and to control the oscillation wavelength of the respective laser of said plurality of lasers so that an output value of the respective light detecting unit becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths.

17. (NEW) An apparatus, comprising:

a light source having a plurality of lasers capable of oscillating at a plurality of wavelengths;

a light detecting unit to receive laser light output from an etalon filter, and to detect light intensity of the received laser light; and

a control unit to generate oscillation of one of said lasers at a desired wavelength, and to control the oscillation wavelength of the laser so that an output value of said light detecting unit becomes equal to a target value corresponding to said desired wavelength.

18. (NEW) A method comprising:

oscillating a plurality of wavelengths output from a plurality of lasers of a light source;

receiving laser light output from said light source with an etalon filter having a periodic

transmittance-wavelength characteristic;

receiving laser light output from said etalon filter and detecting light intensity of the received laser light; and

generating oscillation of one of said plurality of lasers at a desired wavelength, and controlling the oscillation wavelength of the laser so that an output value of said detecting becomes equal to a target value corresponding to said desired wavelength among a plurality of target values respectively set for each of said plurality of wavelengths.